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10/715,492	11/19/2003	Edwin W. Albers	TMC0301	4508

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EXAMINER	
HERTZOG, ARDITH E	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/715,492	ALBERS ET AL.	
	Examiner	Art Unit	
	Ardith E. Hertzog	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *19 Nov 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. Receipt is hereby acknowledged of the information disclosure statement, filed November 19, 2003. As the submission is in compliance with the provisions of 37 CFR § 1.97, the information disclosure statement has been considered, in accordance with the enclosed PTO-1449.

Specification/Supplemental Declaration

2. The application is objected to, because of alterations which have not been initialed **and dated** as is required by 37 CFR § 1.52(c)(1), which states, in relevant part:

> Any interlineation, erasure, cancellation or other alteration of the application papers filed must be made before the signing of any accompanying oath or declaration pursuant to § 1.63 referring to those application papers and should be **dated and** initialed or signed by the applicant on the same sheet of paper. Application papers containing alterations made after the signing of an oath or declaration referring to those application papers must be supported by a supplemental oath or declaration under § 1.67. (emphasis added)

Note the non-dated alterations made in the first and last full paragraphs on page 3.

Thus, a properly executed declaration (or oath) which complies with 37 CFR § 1.67(a) and identifies the application by application number and filing date is now required.

Minor Informalities – Disclosure/Specification

3. The disclosure is objected to, because of the following minor informalities:

a. In the abstract, it is suggested that "Chlorite-like" be revised as simply "Chlorite" (similar to the 35 U.S.C. § 112, second paragraph, rejection set forth in

paragraph 7. below).

b. On page 10, in the next to the last line, "recycled" is misspelled".

c. On page 11, the next to last paragraph, in the second line, it appears that at least one word is missing after "at least one layered magnesia-rich".

d. On page 11, the next to last paragraph, in the last two lines, "hydrotalcite" is misspelled **twice**.

e. On page 11, the next to last paragraph, in the last line, the recited weight ratio of "about 10:90 to 90:**0** chlorite:hydrotalcite" (emphasis added) is not understood; what comprises the remainder of the "**mixture** of magnesia-rich chlorite and hydrotalcite" (as recited earlier in the paragraph, emphasis added) when the hydrotalcite is **not** present? (Note the related 35 U.S.C. § 112, second paragraph, rejection set forth in paragraph 10. below.)

f. "While there is no set statutory form for claims, the present Office practice is to insist that each claim must be the object of a sentence starting with 'I (or we) claim,' 'The invention claimed is' (or the equivalent)" (see MPEP § 608.01(m)).

g. In claim 7, at line 3, it is suggested that "comprising" be inserted after "the improvement", for proper Jepson claim language (see 37 CFR §1.75(e)(2)).

h. In **each** of claims 8, 9 **and** 10, it is suggested that "In the process" be revised as "The process", for clarity.

i. **Further** in claim 8, "of" should be deleted after "process", for clarity.

j. In claim 12, the last line, it is suggested that "contains" be revised as either "containing" or "which contains", for clarity.

k. The period is missing from the end of claim 12.

l. In claim 14, at line 2, "recycled" is misspelled.

m. In claim 15, at line 2, "hydrotalcite" is misspelled.

n. In claim 18, at line 2, "hydrotalcite" is misspelled **twice**.

Appropriate correction of all the above is required.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR § 1.75(d)(1) and MPEP § 608.01(o). Clear antecedent basis for the following claim limitations has not been found:

a. that the "solid sorbent material contains **hydrotalcite consisting predominantly of magnesia**", as recited in claim 10;

b. **analogously**, the "magnesia-rich solid sorbent material containing **hydrotalcite consisting predominantly of magnesia**", as recited in claim 11; and

c. the **specific** method **steps**, as recited in claim 16 (see related discussion in paragraph 5. below).

Clarification and/or appropriate correction of all the above is required.

5. The attempt to incorporate subject matter into this application by reference to WO 99/19251 is considered improper (per p. 4, first paragraph), because this publication is **not** a US patent, a US patent application publication, or a pending US application, **and** WO 99/19251 evidently contains "essential material" which is necessary to define the claimed invention—namely, the **specific** method **steps** recited

in instant claim 16. See MPEP 608.01(p) I. *A*. It is noted that amending the specification to include these specific method steps would not only overcome the objection discussed in paragraph 4.c. above but would **also** moot any issue of improper incorporation by reference.

Claim Rejections - 35 U.S.C. § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-4, 6 and 16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered vague, indefinite, and/or confusing, due to the "chlorite-type" terminology used in both independent claim 1 (upon which claims 2-4 and 6 ultimately depend) and independent claim16. In particular, it is not understood what "types" of chlorite phyllosilicates applicant intends to encompass with this terminology, **in addition** to simply (chlorite) phyllosilicates (as recited in each of independent claims 7, 12 and 15), especially as the specification appears to teach sorbents based on simply chlorite phyllosilicates (see, for example, SUMMARY OF THE INVENTION section at pp. 2-3, and p. 3, fourth full paragraph). It is therefore concluded that the terminology "chlorite-type" is indefinite, in accordance with:

> The addition of the word "type" to an otherwise definite expression (e.g., Friedel-Crafts catalyst) extends the scope of the expression so as to render it indefinite. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955). Likewise, the phrase "ZSM-5-type aluminosilicate zeolites" was held to be indefinite because it was unclear what "type" was intended to convey. The interpretation was made more difficult by the fact that the

> zeolites defined in the dependent claims were not within the genus of the type of zeolites defined in the independent claim. *Ex parte Attig*, 7 USPQ2d 1092 (Bd. Pat. App. & Inter. 1986). (MPEP § 2173.05(b) E.)

(Note that claim 5, although dependent upon claim 1, has not been included in this rejection, since it clearly specifies that the "phyllosilicate consists essentially of amesite".) Appropriate correction is required.

8. Claims 4 and 6 are **further** rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered **further** vague, indefinite, and/or confusing, due to antecedent basis problems. In particular, there is not proper antecedent basis for "said solid crystalline composition" as recited in both claims 4 and 6 (noting that neither claim 1 nor claim 3, upon which these claims depend, recites a "solid crystalline composition"). Appropriate correction is required.

9. Claims 10 and 11 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered vague, indefinite, and/or confusing, due to the term "predominantly", as used in both claims 10 and 11. In particular, "predominantly" is considered a relative term which renders these claims indefinite, since this term is not defined by the claims, and since the specification does not appear to provide a standard for ascertaining the requisite degree—that is, **how much** magnesia must be present in the recited hydrotalcite in order to be considered "consisting predominantly of magnesia"? Note that this problem is compounded by applicant's use of the transitional phrase "consisting of"—i.e., **closed** language (see

MPEP § 2111.03)—and thus it is unclear what other component(s) (if any) may be present in the recited hydrotalcite "consisting predominantly of magnesia". Accordingly, it is respectfully submitted that one of ordinary skill in the art would not be reasonably apprised of the scope of the invention, as recited in both claims 10 and 11. Appropriate correction is required.

10. Claim 18 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claim is considered vague, indefinite, and/or confusing, because the recited weight ratio of "about 10:90 to 90:**0** chlorite:hydrotalcite" (emphasis added) is not understood; what comprises the remainder of the "**mixture** of magnesia-rich chlorite and hydrotalcite" (as recited earlier in the claim, emphasis added) when the hydrotalcite is **not** present? **Accordingly, as the intended scope of claim 18 cannot be accurately determined (especially as the specification contains the same unclear disclosure, as discussed in paragraph 3.e. above), it has *not* been further treated on the merits (i.e., rejected on prior art grounds below)**. Appropriate correction is required.

Claim Rejections - 35 U.S.C. §§ 102 & 103

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 11 and 17 are rejected under 35 U.S.C. § 102(b) as being anticipated by Albers et al. (US 5,928,496, hereinafter "Albers et al. '496"). Albers et al. '496 teach sulfur oxide sorption processes using hydrotalcites as contact solids (see Albers et al. '496 abstract). The hydrotalcites used by Albers et al. '496 may be not only "magnesia-rich", as recited in instant claims 11 and 17, but also have "layered brucite structure", as recited in instant claim 17 (see col. 4, lines 43-54; Albers et al. '496 independent claims 1, 5, 6, and 12, noting especially the molar ratio range of magnesia to alumina recited in each). **Furthermore**, Albers et al. '496 **exemplify** sulfur oxide sorption processes using such hydrotalcites (see Albers et al. '496 Examples 1, 3 and 4 in Table 1 (col. 5)). **Accordingly**, Albers et al. '496 anticipate instant claims 11 and 17, because, as just discussed, processes meeting all material limitations thereof (noting that neither instant claim 11 nor instant claim 17 requires the presence of applicant's "phyllosilicate" component) are **exemplified** in this patent.

14. Claims 1, 2, 7-9 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art in view of Wright et al. (US 3,963,602, hereinafter "Wright et al. '362"). In the preamble of independent **Jepson** claims 1 and 7, applicant admits that: 1) processes of "sulfur oxide sorption wherein a gas containing sulfur oxide is contacted at elevated process temperature with a solid sorbent material to remove sulfur oxide from the gas"; **and** 2) processes of "cracking a heavy

hydrocarbon feed stock containing sulfur compounds, wherein a gas phase containing sulfur oxide is contacted at process temperature in the range of 700° to 820° C with a solid sorbent material to remove sulfur oxide from the gas" are known in the prior art (see MPEP § 2129 III.) **However**, applicant does **not** admit that the **specific** "solid sorbent material" recited in instant claim 1 (upon which instant claim 2 depends) nor the **specific** "solid sorbent material" recited in instant claim 7 (upon which instant claims 8 and 9 depend) is known in the prior art.

15. Wright et al. '362 teach cracking of hydrocarbons with phyllosilicate septochlorite catalysts, wherein the septochlorite may be amesite, per instant claim 9 (see Wright et al. '362 abstract; col. 1, line 35 – col. 3, line 33, especially col. 2, lines 21-31 and 60-64; Wright et al. '362 claims). As the amesite of instant claim 9 is the preferred "magnesia-rich layered phyllosilicate" required by instant independent claim 7 (upon which instant claim 9 depends), it is respectfully submitted that this amesite must **also** meet the magnesium oxide requirements of instant claim 8 (also dependent upon instant claim 7); note that these magnesium oxide requirements are those recited in instant claim 2 (dependent upon instant claim 1). **Accordingly**, it would have been obvious to one of ordinary skill in the art, at the time of applicant's invention, to have used amesite as taught by Wright et al. '362 in applicant's admitted prior art "sulfur oxide sorption" and "cracking a heavy hydrocarbon feed stock" processes, because, as just discussed, Wright et al. '362 teach that this specific phyllosilicate chlorite is an effective catalyst for use in such processes, specifically, hydrocarbon cracking processes. When having done so, it is respectfully submitted that, absent contrary evidence, processes falling

within the scope of instant claims 1, 2, 7-9 and 12 would have obviously resulted, given that, again, all material limitations required by the body of instant claims 1, 2 and 7-9 are taught by Wright et al. '362, noting that instant independent claim 12 covers processes of essentially the same scope as the combination of instant claims 1 and 2, only not in Jepson format.

16. Claims 3-6, 10 and 13-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art in view of Wright et al. '362, as applied to claims 1, 2, 7 and 12 above, and **further** in view of Albers et al. '496. Applicant's admitted prior art and Wright et al. '362 are relied upon as set forth in paragraphs 14.-15. above, having rendered *prima facie* obvious processes falling within the scope of applicant's independent claims 1, 7 and 12 (upon which instant claims 3-6, 10, 13 and 14 depend), as well as applicant's claim 2. **However**, neither applicant's admitted prior art nor the Wright et al. '362 patent teaches: depositing "an effective amount of oxidative metal catalyst" upon the phyllosilicate chlorite, per instant claim 3 (upon which instant claims 4 and 5 depend); the addition of "hydrotalcite rich in magnesia"/"hydrotalcite consisting predominantly of magnesia", per instant claims 6 and 10, as well as instant independent claim 15; the addition of "an oxidation metal to convert sulfur dioxide to sulfur trioxide" to the phyllosilicate chlorite, per instant claim 13; or that "the solid sorbent is regenerated and recycled", per instant claim 14.

17. Again, Albers et al. '496 teach sulfur oxide sorption processes using hydrotalcites as contact solids (see again Albers et al. '496 abstract). Again, the hydrotalcites used by Albers et al. '496 may be "rich in magnesia"/"consist... predominantly of magnesia",

as recited in instant claims 6 and 10, as well as instant independent claim 15 (see again col. 4, lines 43-54; Albers et al. '496 independent claims 1, 5, 6, and 12, noting especially the molar ratio range of magnesia to alumina recited in each, which **clearly encompasses** the **specific** amount of magnesia required by instant claim 15). Again note that the hydrotalcites used by Albers et al. '496 have "brucite crystalline structure" (see col. 4, lines 50-54)—as do the phyllosilicate chlorite catalysts taught by Wright et al. '362 (see Wright et al. '362 col. 1, lines 58-60 (and compare to Albers et al. '496 col. 1, lines 44-46)). **Accordingly**, when having utilized the phyllosilicate chlorite catalysts of Wright et al. '362 in applicant's admitted prior art processes, it would have been **further** obvious to one of ordinary skill in the art, at the time of applicant's invention, to have supplemented such phyllosilicate chlorite catalysts with the hydrotalcite contact solids of Albers et al. '496, because of not only their similarity in structure, but **also** because:

> "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) (citations omitted) (Claims to a process of preparing a spray-dried detergent by mixing together two conventional spray-dried detergents were held to be *prima facie* obvious.) See also *In re Crockett*, 279 F.2d 274, 126 USPQ 186 (CCPA 1960) (Claims directed to a method and material for treating cast iron using a mixture comprising calcium carbide and magnesium oxide were held unpatentable over prior art disclosures that the aforementioned components individually promote the formation of a nodular structure in cast iron); and *Ex parte Quadranti*, 25 USPQ2d 1071 (Bd. Pat. App. & Inter. 1992) (mixture of two known herbicides held *prima facie* obvious). (MPEP § 2144.06)

When having done so, it is respectfully submitted that, absent contrary evidence,

processes falling within the scope of instant claims 6 and 10, would have obviously resulted, noting that the weight percentage range of magnesia in the chlorite required by instant claim 6 is only slightly narrower in scope than that required by instant claim 2 (again, considered *prima facie* obvious over the combination of applicant's admitted prior art and Wright et al. '362). **Analogously**, when having done so, it is respectfully submitted that, absent contrary evidence, sorbent compositions falling within the scope of instant claim 15 would have obviously resulted, noting that: 1) here as well the weight percentage range of magnesia in the chlorite required by instant claim 15 is the same as that required by instant claim 2 (once again, considered *prima facie* obvious over the combination of applicant's admitted prior art and Wright et al. '362); **and** 2) Albers et al. '496 **exemplify** a sorbent composition wherein the amounts of hydrotalcite **and** an additional phyllosilicate (i.e., talc) fall within the scope of the corresponding parts-by-weight ranges required by instant claim 15 (see Table 1, Example 4, in col. 5 of Albers et al. '496, wherein the amount of phyllosilicate is 15 pbw and the amount of hydrotalcite is 10 pbw). With respect to instant claims 3 and 13, Albers et al. '496 teach:

> Sulfur oxide sorption may be enhanced by depositing on the hydrotalcite-containing solid sorbent material an effective amount... of oxidative metal catalyst, such as... cerium, etc. This is believed to permit sulfur dioxide to be oxidized to sulfur trioxide to provide a sulfate ion in the sorbent lattice as a "gallery layer" anion. (col. 4, lines 55-61)

With respect to instant claim 4, Albers et al. '496 **further** teach that "[c]erium and vanadium oxide are also suitable oxidization/reduction components" (see col. 6, lines 1-2). **Accordingly**, it would have been **further** obvious to one of ordinary skill in the art, at the time of applicant's invention, to have included an "oxidative metal catalyst", per

instant claim 3, to help "convert sulfur dioxide to sulfur trioxide", per instant claim 13, such as "cerium oxide and vanadium pentoxide", per instant claim 4, in the hydrotalcite contact solids of Albers et al. '496, when having supplemented the phyllosilicate chlorite catalysts of Wright et al. '362 with same, because, as just discussed, Albers et al. '496 **clearly** teach that doing so enhances sulfur oxide sorption. When having done so, it is respectfully submitted that, absent contrary evidence, processes falling within the scope of instant claims 3-5 and 13 would have obviously resulted, noting that Wright et al. '362 already teach the amesite of instant claim 5 (as discussed in paragraph 15. above). **Lastly**, with respect to instant claim 14, Albers et al. '496 **explicitly** teach regeneration of the hydrotalcite sorbents (see col. 5, lines 13-15; Albers et al. '496 claim 9). **Accordingly**, when having supplemented the phyllosilicate chlorite catalysts of Wright et al. '362 with the hydrotalcite contact solids of Albers et al. '496, it would have been **further** obvious to one of ordinary skill in the art, at the time of applicant's invention, to have "regenerated" the hydrotalcite sorbents, and "recycled" same, if so desired, because, as just discussed, Albers et al. '496 **explicitly** teach such "regeneration", with the efficiency/economic benefits of recycling **any** catalyst/sorbent considered to have been well known in the chemical process art (see, for example, Pinnavaia et al. (US 5,785,938)). When having done so, it is respectfully submitted that, absent contrary evidence, processes falling within the scope of instant claim 14 would have obviously resulted.

18. Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over applicant's admitted prior art in view of Wright et al. '362 and Albers et al. '496, as

applied to claims 3, 4 and 13 above, and **further** in view of WO 99/19251 (hereinafter "WO '251"). Applicant's admitted prior art, Wright et al. '362, and Albers et al. '496 are relied upon as set forth in paragraphs 16.-17. above, having rendered *prima facie* obvious processes falling within the scope of instant claims 3, 4 and 13 (i.e., those claims of applicant which require the presence of "oxidative metal catalyst"/"oxidation metal to convert sulfur dioxide to sulfur trioxide"). **However**, applicant's admitted prior art, the Wright et al. '362 patent, and the Albers et al. '496 patent fail to teach the specific "method of making" required by applicant's independent claim 16.

19. WO '251 teaches solid particle manufacture, the method being "particularly useful in making multi-component solids" (see WO '251 abstract); note that the WO '251 method comprises basically the **same** steps recited in instant claim 16. Also note that WO '251 explicitly states that this method is useful for manufacturing "contact solids, such as sorbents or catalysts" (see p. 2, lines 35-36), including those containing hydrotalcite (see p. 3, line 13). **Moreover**, in WO' 251 Example D, this method is used to make a composition comprising the **same** components, in the **same** relative proportions, as Example 4 of Albers et al. '496 Table 1 (see again Albers et al. '496 col. 5) (see WO '251 p. 10, lines 18-31, especially lines 26-31). **Accordingly**, when having utilized the phyllosilicate chlorite catalysts of Wright et al. '362 in applicant's admitted prior art processes, supplementing such phyllosilicate chlorite catalysts with the hydrotalcite contact solids of Albers et al. '496, as discussed *supra*, it would have been **further** obvious to one of ordinary skill in the art, at the time of applicant's invention, to have utilized the WO '251 solid particle manufacture in making same, because, as just

discussed, WO '251 **clearly** teaches that such methods are useful for manufacturing "contact solids, such as sorbents or catalysts" (see again p. 2, lines 35-36), even **exemplifying** their use in manufacturing a composition **evidently identical** to one **exemplified** by Albers et al. '496 Table 1 (see again WO '251 p. 10, lines 18-31, especially lines 26-31; Albers et al. '496 col. 5).

Double Patenting

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

21. A timely filed terminal disclaimer in compliance with 37 CFR § 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR § 1.130(b).

22. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR § 3.73(b).

23. Claims 11 and 17 are rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 5,928,496 (i.e., Albers et al. '496, applied *supra*). Although the conflicting claims are not **identical**, they are **not patentably distinct from each other**, because:

Claim 11: The preamble of patented independent claim 1, in Jepson format, is **clearly** encompassed by the preamble of instant independent claim 11, also in Jepson format, **and** the body of this patented claim comprises an "improvement" which is **clearly** encompassed by that recited in instant claim 11. That is, similar to the corresponding 35 U.S.C. § 102(b) rejection set forth in paragraph 13. above, the "fluidizable particulate solid sorbent material... comprising at least one layered hydrotalcite crystalline sheet having a brucite crystalline structure containing divalent and trivalent metal oxides comprising predominantly magnesia and alumina present in the brucite structure in molar ratio of 3:1 to 8:1 magnesia:alumina, together with a sulfur oxide replaceable anion..." recited in patented claim 1 is considered to **clearly** fall within the scope of the broader "solid sorbent material" recited in instant claim 11 (again noting that instant claim 11 does not require the presence of applicant's "phyllosilicate" component).

Claim 17: The preamble of patented independent claim 1, in Jepson format, is **clearly** encompassed by the preamble of instant independent claim 17, also in Jepson format, **and** the body of this patented claim comprises an "improvement" which is **clearly** encompassed by that recited in instant claim 17. That is, similar to the corresponding 35 U.S.C. § 102(b) rejection set forth in paragraph 13. above, the "fluidizable particulate solid sorbent material... comprising at least one

layered hydrotalcite crystalline sheet having a brucite crystalline structure containing divalent and trivalent metal oxides comprising predominantly magnesia and alumina present in the brucite structure in molar ratio of 3:1 to 8:1 magnesia:alumina, together with a sulfur oxide replaceable anion..." recited in patented claim 1 is considered to **clearly** fall within the scope of the broader "solid sorbent material" recited in instant claim 17 (again noting that instant claim 17 does not require the presence of applicant's "phyllosilicate" component).

Thus, for those reasons just set forth, instant claims 11 and 17 would have been *prima facie* obvious to one of ordinary skill in the art, at the time of applicant's invention, in view of patented claim 1.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are considered cumulative to or less material than those discussed above. Note that US 3,917,541 is the parent patent of which the Wright et al. '362 patent is a division. Note that US 6,156,696 is a division of Albers et al. '496 applied above. Schultz et al. (US 5,399,329) and Kelkar et al. (US 5,507,980) are incorporated by reference in Albers et al. '496; Schultz et al. is noted in WO' 251 Example D. The Vaughn patents (US 5,326,734 and US 5,416,051) both teach the use of pillared kandite clays as catalyst supports and sorbents (see abstracts of both), wherein amesite is disclosed as a suitable kandite material (see Table 1 in col. 2 of '734; Table 1 in col. 4 of '051). Cox et al. (US 5,364,828) disclose that the chlorite phyllosilicate, penninite (disclosed by applicant at instant p. 3, third full paragraph), is

found in "natural hydrotalcite composites" (see col. 1, lines 27-31). Torii et al. (US 5,595,716) disclose that amesite is considered a form of serpentine (see col. 1, lines 47-56). JP 49-94591 teaches catalysts for waste gas purification comprising a clay mineral, which may be serpentine or chlorite (see DERWENT abstract).

25. Any inquiry concerning this communication should be directed to Ardith E. Hertzog at telephone number (571) 272-1347. The examiner can normally be reached on Monday through Friday (from about 7:30 a.m. - 3:30 p.m.).

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman, can be reached at (571) 272-1358. The fax phone number for the organization where this application is assigned is 703-872-9306.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. For any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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